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Public Health Assistance in Nutrition Education

Rickettsialpox Case Due to Laboratory Infection

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Public Health Reports

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Negro Mortality

. Urban and Rural Mortality from Selected Causes in the North and South

By MARYLAND Y. PENNELL, M.Sc.Hyg., and MARY GOVER, D.Sc.Hyg.*

Seven important causes of death are largely responsible for the fact that Negro death rates exceed those of the white population. These seven—tuberculosis, nephritis, influenza and pneumonia, intracranial lesions of vascular origin, diseases of the heart, syphilis, and homicide—caused 514 more deaths per 100,000 persons among nonwhite than among white persons in 1940 (table 2). Several other causes also contribute to the higher mortality of the Negro. Differences in the relative importance of the several causes vary with the degree of urbanization in the Northern and Southern regions of the United States.

Death rates from selected causes are presented by size-of-city groups for the Northern and Southern sections of the Eastern and Central United States. Similar data for the West have been omitted; there, only one-third of the half a million nonwhite inhabitants are Negroes (*1*). In the North 96 percent of the nonwhite persons are Negroes; in the South, 99 percent. Thus, the mortality data for these two regions allow comparison of the Negro race with the white.

A total of 12,865,518 Negroes and 588,887 other nonwhite persons were enumerated in the United States in 1940. The distribution of the nonwhite population with respect to urbanization and region was not like that of the white population (table 1). The total population of the United States was divided in the proportions of 29, 28, and 43 percent, respectively, living in cities of 100,000 or more inhabitants, in smaller cities of 2,500 to 100,000 inhabitants, and in rural areas with no incorporated place having as many as 2,500 inhabitants (*2*). Since nine-tenths of the total population of the continental United States was white, the proportions of the white population in each size-of-city group were identical with those of the total population.

*Biostatisticians, Division of Public Health Methods, Public Health Service. This is the fourth and last in a series of studies of Negro mortality based on 1940 data assembled principally from reports of the National Office of Vital Statistics and prepared at the request of the Special Programs Branch of the Bureau of State Services, Public Health Service. This study was in progress at the time of Dr. Gover's death in August 1949.

Table 1. *Nonwhite and white population by region and population-size groups, 1940*

Region and color	Total population	Population by size of city					
		Number			Percent		
		100,000 or more	2,500 to 100,000	Rural	100,000 or more	2,500 to 100,000	Rural
United States [1]	131,669,275	37,987,989	36,435,713	57,245,573	29	28	43
Nonwhite	13,454,405	3,636,348	2,814,531	7,003,526	27	21	52
White	118,214,870	34,351,641	33,621,182	50,242,047	29	28	43
The North: [2]							
Nonwhite	2,913,371	1,965,466	577,781	370,124	67	20	13
White	73,206,738	25,663,013	22,799,308	24,744,417	35	31	34
The South: [3]							
Nonwhite	10,007,323	1,480,113	2,151,125	6,376,085	15	21	64
White	31,658,578	4,587,400	7,071,845	19,999,333	15	22	63

[1] Includes the West—Mountain and Pacific geographic divisions.
[2] New England, Middle Atlantic, East North Central, and West North Central geographic divisions.
[3] South Atlantic, East South Central, and West South Central geographic divisions.

With respect to the nonwhite population, however, smaller proportions of the total were in the large and small cities (27 and 21 percent, respectively) and a considerably greater proportion (52 percent) in rural areas.

For each race the urban-rural distribution of the population in the Eastern and Central United States was the same as for the country as a whole. In the South both racial groups were largely rural and both were distributed in the same proportions among size-of-city groups. In the North, however, the white population was located almost equally in large and small cities and rural areas, while the Negroes were predominantly in large cities with only about 13 percent in rural areas. Any nonwhite-white comparison of mortality is, therefore, unaffected by degree of urbanization in the South, while in the North, account must be taken of the wide difference in the extent of urbanization of the two races.

The number of resident deaths in 1940 has been tabulated by the National Office of Vital Statistics of the Public Health Service according to State, population-size group, sex, and color for an abridged list of causes of death (*3*). Crude death rates for nonwhite and for white persons have been computed for each of 27 causes for the North and South sections of the Eastern and Central United States for each of three size-of-city groups. These rates for all ages combined have been adjusted for differences in the age distributions by the indirect method, using the total population of the United States enumerated in 1940 as the standard.

Both crude and age-adjusted death rates are given in table 2 in order to show the relative importance of various causes of death among white and nonwhite groups. Since the enumerated nonwhite population was relatively younger than the white and comprised only one-tenth of the standard population used for age adjustment, it follows

that age adjustment of the crude death rates frequently raised the nonwhite rate by a considerable amount and made only a comparatively small change in the white rate (*5*). The effect of proportionately more children in the nonwhite population was reflected in the extent to which age adjustment lowered the crude death rates for such childhood diseases as whooping cough and diphtheria. On the other hand, deaths from diseases of old age, such as diseases of the heart and cancer, showed considerably higher rates for the nonwhite population after age adjustment.

The 27 causes of death listed in table 2 account for a large majority of the total number of deaths tabulated for the calendar year 1940—84 percent of the white and 78 percent of the nonwhite deaths. An additional 4 to 5 percent of the deaths were classified as due to infancy or conditions related to childbirth. The remaining deaths were combined under the heading "all other causes" in the abridged tabulation (*3*). Other tabulations indicate that nearly 7 percent of the Negro deaths were classified as due to senility, ill-defined, and unknown causes, subgroups which accounted for less than 2 percent of the white deaths in 1940.

Table 2. *Nonwhite and white mortality from 27 causes in the Eastern and Central United States,[1] 1940: Resident deaths per 100,000 population*

Cause of death	International List numbers, 1938 revision	Nonwhite mortality		White mortality		Ratio of nonwhite to white age-adjusted mortality
		Age-adjusted [2]	Crude	Age-adjusted [2]	Crude	
Diseases of heart (all forms)	90–95	354.31	251.01	290.36	295.50	1.22
Nephritis	130–132	178.53	127.41	75.90	77.46	2.35
Intracranial lesions of vascular origin	83	162.67	113.54	86.85	88.80	1.87
Influenza and pneumonia (all forms)	33, 107–109	145.17	126.02	63.62	64.12	2.28
Tuberculosis (all forms)	13–22	138.11	125.00	35.41	35.56	3.90
Cancer and other malignant tumors	45–55	105.21	77.44	121.91	124.21	.86
Accidents	169–195	86.49	76.44	70.43	70.88	1.23
Syphilis	30	64.58	54.64	9.29	9.37	6.95
Homicide	165–168	35.06	33.77	3.06	3.05	11.46
Diabetes mellitus	61	24.88	17.99	27.66	28.23	.90
Hernia, intestinal obstruction	122	13.68	11.06	8.63	8.74	1.59
Appendicitis	121	11.23	10.50	9.64	9.68	1.16
Pellagra	69	8.64	6.55	1.12	1.14	7.71
Ulcer of stomach or duodenum	117	8.08	6.29	6.44	6.53	1.25
Diseases of ear, nose, and throat	89, 104, 115	7.52	7.51	5.03	5.02	1.50
Cirrhosis of the liver	124	7.12	5.44	8.30	8.44	.86
Malaria	28	6.21	5.80	.65	.65	9.55
Whooping cough	9	4.76	5.77	1.83	1.80	2.60
Suicide	163–164	4.71	4.01	14.40	14.52	.33
Typhoid and paratyphoid fever	1, 2	3.41	3.27	.87	.87	3.92
Biliary calculi, other diseases of gallbladder	126, 127	3.15	2.35	6.31	6.43	.50
Acute rheumatic fever	58	2.57	2.65	1.22	1.22	2.11
Exophthalmic goiter	63b	2.39	1.83	2.87	2.91	.83
Diphtheria	10	1.55	1.74	1.06	1.04	1.46
Cerebrospinal (meningococcus) meningitis	6	.61	.63	.53	.53	1.15
Poliomyelitis, polioencephalitis (acute)	36	.47	.53	.79	.78	.59
Scarlet fever	8	.24	.26	.56	.55	.43

[1] Exclusive of the Mountain and Pacific geographic divisions.
[2] Death rates specific for cause and color adjusted for age by the indirect method to the total population of the United States enumerated in 1940.

Diseases of the heart constituted the leading cause of death in 1940 among both the nonwhite and white population in the Eastern and Central United States (table 2 and fig. 1, *4*). Nonwhite mortality from the second highest cause, nephritis, was only half as great. Deaths from intracranial lesions of vascular origin, influenza and pneumonia, and tuberculosis varied but slightly in numerical importance and followed nephritis in descending order of magnitude. Cancer and other malignant tumors ranked sixth as cause of death among nonwhites but held second place among whites. Accidents, syphilis, homicide, and diabetes mellitus all ranked comparatively high in the mortality list for the nonwhite population.

The difference between the nonwhite and white mortality for each cause of death has been expressed in terms of ratios in the last column of table 2 and as the percentage excess for nonwhites over whites on the right side of figure 1. The greatest difference is apparent for homicide, the ninth leading cause of death among the nonwhite and the seventeenth cause among the white population. Mortality from homicide among the nonwhite population was about 11 times more frequent than among the white population. Causes of death which

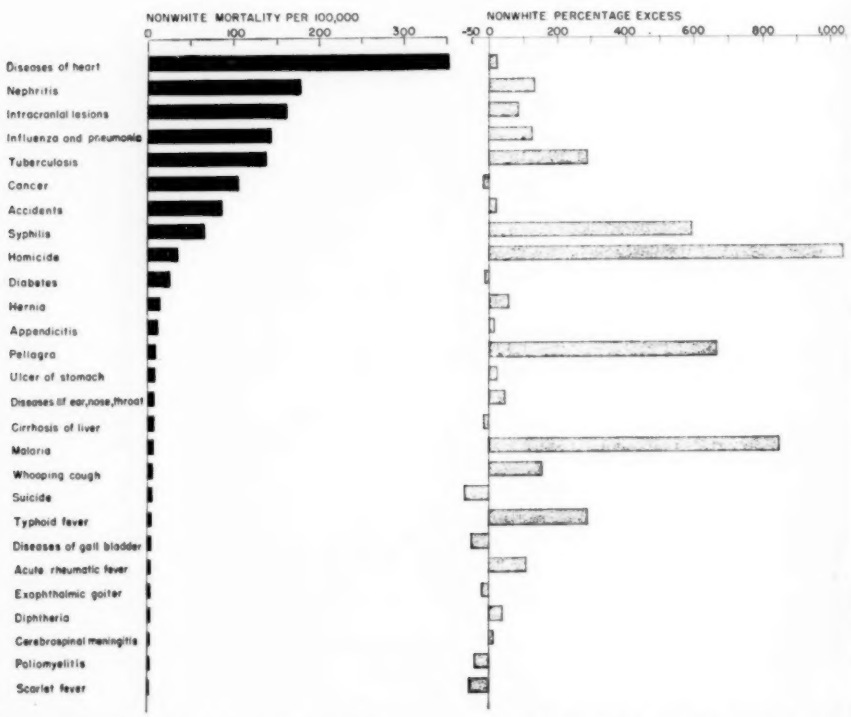

Figure 1. Nonwhite mortality from 27 causes in the Eastern and Central United States, and the percentage excess of nonwhite over white mortality—resident age-adjusted mortality, 1940.

occur primarily in the South, namely, malaria, pellagra, and typhoid fever, were relatively high when arrayed by this nonwhite-white ratio. There was also a relatively large nonwhite excess in mortality from syphilis and from tuberculosis. Whooping cough, nephritis, pneumonia, and rheumatic fever complete the list of the causes of death with rates more than twice as high among the nonwhite as among the white population. The nonwhite excess in mortality from heart disease was only about 20 percent.

Mortality rates from each of eight causes of death were numerically lower among the nonwhite than the white population (fig. 1). Cancer and diabetes were the highest ranking causes of death for the nonwhites among the causes that showed excess white mortality. Suicide showed the greatest percentage excess for white persons, with a mortality rate three times that of the nonwhite population.

Ranking of 10 Leading Causes

The 10 leading causes of death among the nonwhite population in 1940, arrayed according to magnitude in the Eastern and Central United States, are shown in figure 2 for each of three population-size groups in the North and South sections. In the South the array of causes of death did not vary materially with size of city. Heart disease was always in first place; nephritis and intracranial lesions were second and third; influenza-pneumonia and tuberculosis were fourth and fifth; cancer was in sixth place in the cities and ranked seventh in rural areas.

In the North a few differences in array of nonwhite deaths were associated with population size. Heart disease was still the leading cause of death. Tuberculosis was in second place except in small cities. Cancer was relatively more important as a cause of death in large cities where it ranked third; in small cities it ranked sixth and in rural areas, seventh. Influenza-pneumonia ranked sixth in large cities and fourth in small cities and rural areas. Syphilis was in the eighth place in cities and third in rural areas.

When population groups of the same size are compared, differences between the two regions appear for the 10 highest causes of death among nonwhites. In cities of 100,000 or more persons, tuberculosis and cancer were relatively more important causes of death among nonwhite persons in the North than in the South. In the South, nephritis, intracranial lesions, and influenza-pneumonia were all more important causes of death than tuberculosis and cancer. In small cities, the 10 leading causes ranked alike in the North and South, except for the interchange of homicide and diabetes in the last two places. In rural areas tuberculosis and syphilis ranked higher in the North than in the South, while nephritis, intracranial lesions, and influenza-pneumonia ranked higher in the South than in the North

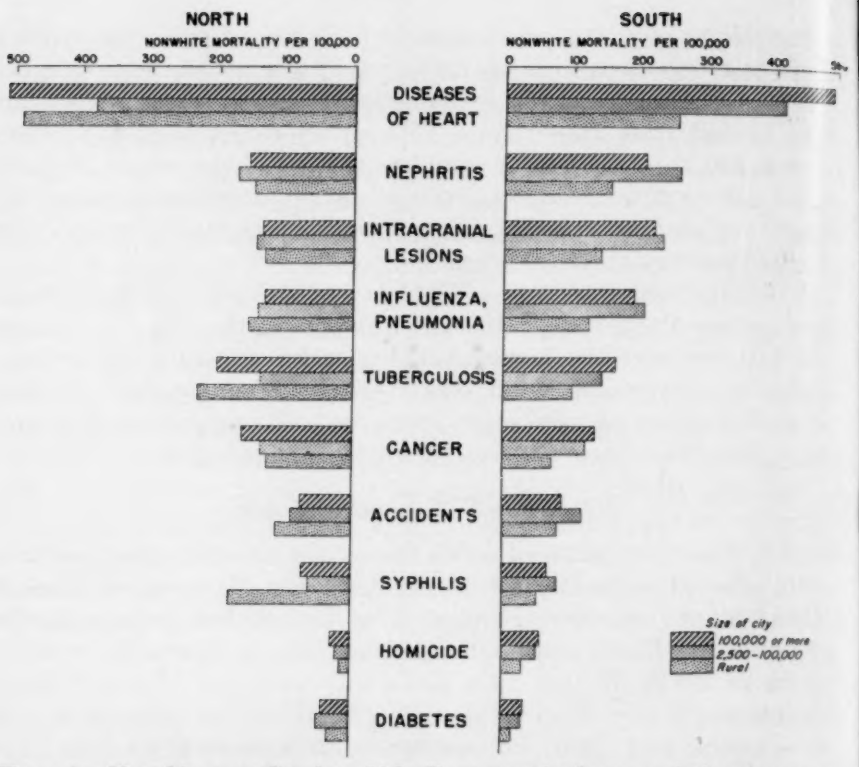

Figure 2. Nonwhite mortality from 10 leading causes in three population-size groups in the North and South sections of the Eastern and Central United States—resident age-adjusted mortality, 1940.

The outstanding differences, then, in the array of causes of death in relation to size of community were, in the North, a relatively high ranking for cancer in large cities and a high ranking for syphilis in rural areas. Tuberculosis ranked as a more important cause of death in the North than in the South, while nephritis and intracranial lesions ranked high in the South. It must be kept in mind that these comparisons represent the relative positions of these diseases in the arrays for the two regions and not the actual magnitude of the mortality rates.

Urban-Rural Differences

Nonwhite and white mortality rates for the 27 causes of death are given in table 3 for three population-size groups in the North and South sections of the Eastern and Central United States. The general tendency was for mortality rates to decrease with decrease in size of community, as was notably the case for nonwhite mortality from heart disease, cancer, diabetes, and homicide. With respect to some other causes, mortality rates in large cities may be lower than in small

cities, although all urban mortality is higher than rural; rates for nephritis and intracranial lesions were of this pattern.

In the South nonwhite rates for each of the 10 leading causes of death all showed rural mortality in the lowest place, but in the North the rural rates for several causes were higher than those for larger communities (fig. 2). Unusually high rates in Northern rural areas were observed for influenza-pneumonia, tuberculosis, accidents, and syphilis. An analysis of each of the 27 causes of death among nonwhite persons showed that the rural rates were in lowest place 22 times in the South but only 12 times in the North. In the North rural rates ranked first 11 times (table 3).

Factors which influence mortality differences between rural areas and small cities are the failure to allocate deaths properly to the place of residence and the incompleteness of death registration. Also, the reporting of multiple causes of death by physicians occurs more frequently in urban areas, particularly near large medical centers. The details of diagnosis may be less accurately reported in rural areas.

The ratio of the nonwhite to white mortality also shows the differences associated with community size. In the South the nonwhite percentage excess of mortality was relatively smaller in rural areas. The reverse was apparent in the North.

North-South Comparisons

The percentage excess of mortality in the North over the South also brings out the difference in Northern rural mortality. Comparison of Northern and Southern rates for the three population-size groups are given in table 4 for all 27 causes and in figure 3 for the 10 leading causes.

For each cause of death illustrated in figure 3, the percentage by which the nonwhite rates for the North exceeded those for the South was greater for rural areas than for the urban communities. All but 2 of the 10 leading causes of death shown in figure 3 were associated with old age, the exceptions being accidents and homicide. An examination of the other causes of death indicates that it was chiefly the diseases characteristic of old age that exhibited excessive nonwhite mortality in Northern rural areas.

The observed excess in rural areas of the North has been attributed by many writers largely to the inaccurate or deficient death registration in the rural South. A special tabulation of nonwhite deaths classified as due to senility, ill-defined, and unknown causes of death has been made by the National Office of Vital Statistics. One-half of this subgroup rate has been used as most indicative of death from old age and has been added to the sum of mortality from the eight old-age causes of death in the crude death rates which follow.

Table 3. ***Nonwhite and white mortality from 27 causes in the North and South sections of the Eastern and Central United States, by population-size groups: Resident age-adjusted mortality per 100,000 population, 1940***

Cause of death	Nonwhite mortality by size of city			White mortality by size of city			Ratio of nonwhite to white mortality by size of city		
	100,000 or more	2,500 to 100,000	Rural	100,000 or more	2,500 to 100,000	Rural	100,000 or more	2,500 to 100,000	Rural
	The North [1]								
Diseases of heart (all forms)	509.50	380.78	409.27	361.22	302.39	263.85	1.41	1.26	1.55
Nephritis	153.86	171.44	146.28	69.09	75.43	69.93	2.23	2.27	2.09
Intracranial lesions of vascular origin	133.44	142.36	129.80	76.15	90.43	88.17	1.75	1.57	1.47
Influenza and pneumonia (all forms)	129.12	140.15	154.43	56.45	54.29	58.87	2.29	2.58	2.62
Tuberculosis (all forms)	200.26	136.30	228.32	36.60	28.37	30.56	5.47	4.80	7.47
Cancer and other malignant tumors	161.57	133.83	124.98	151.56	131.18	109.96	1.07	1.02	1.14
Accidents	74.89	90.10	110.90	64.23	69.86	72.07	1.17	1.29	1.54
Syphilis	71.52	61.94	179.28	9.94	8.40	10.04	7.20	7.37	17.86
Homicide	29.81	23.03	15.87	2.46	1.57	1.58	12.12	14.67	10.04
Diabetes mellitus	42.46	46.69	32.21	36.88	31.28	24.29	1.15	1.49	1.33
Hernia, intestinal obstruction	14.50	16.70	9.30	9.22	9.20	8.34	1.57	1.82	1.12
Appendicitis	11.32	14.00	11.00	9.62	10.98	9.37	1.18	1.28	1.17
Pellagra	.71	1.34	.64	.16	.14	.17	4.44	9.57	3.76
Ulcer of stomach or duodenum	8.36	9.13	8.03	7.45	6.97	5.41	1.12	1.31	1.48
Diseases of ear, nose, and throat	6.86	9.36	6.33	4.65	5.19	4.90	1.48	1.80	1.29
Cirrhosis of the liver	9.73	10.17	5.91	11.98	8.52	6.16	.81	1.19	.96
Malaria	.66	1.46	3.29	.11	.09	.17	6.00	16.22	19.35
Whooping cough	2.45	5.25	5.92	.72	1.40	1.62	3.40	3.75	3.65
Suicide	7.13	6.74	8.97	14.65	14.22	15.07	.49	.47	.60
Typhoid and paratyphoid fever	.89	2.74	3.84	.30	.49	.64	2.97	5.59	6.00
Biliary calculi, other diseases of gall-bladder	5.06	5.19	6.27	7.34	7.33	5.79	.69	.71	1.08
Acute rheumatic fever	2.37	3.67	3.27	1.36	1.39	1.09	1.74	2.64	3.00
Exophthalmic goiter	3.50	4.45	5.56	3.17	3.44	3.23	1.10	1.29	1.72
Diphtheria	.82	.89	2.77	.44	.63	.62	1.86	1.41	4.47
Cerebrospinal (meningococcus) meningitis	.47	1.58	1.05	.38	.63	.38	1.24	2.51	2.76
Poliomyelitis, polioencephalitis (acute)	.45	1.04	.78	.45	.97	1.03	1.00	1.07	.76
Scarlet fever	.61	1.27	.00	.48	.55	.79	1.27	2.31	.....
	The South [2]								
Diseases of heart (all forms)	491.40	412.04	252.59	351.70	284.97	195.21	1.40	1.45	1.29
Nephritis	206.70	258.03	155.57	90.92	100.76	84.58	2.27	2.56	1.84
Intracranial lesions of vascular origin	219.68	231.95	140.04	88.58	104.96	88.10	2.48	2.21	1.59
Influenza and pneumonia (all forms)	189.99	205.27	122.80	73.40	88.12	80.89	2.59	2.33	1.52
Tuberculosis (all forms)	164.42	143.96	99.16	45.70	49.04	41.56	3.60	2.94	2.39
Cancer and other malignant tumors	133.40	119.63	70.48	131.45	118.78	79.12	1.01	1.01	.89
Accidents	85.86	114.93	79.09	75.41	93.93	67.85	1.14	1.22	1.17
Syphilis	66.16	79.09	48.68	11.22	13.66	6.16	5.90	5.79	7.90
Homicide	54.40	50.41	27.64	5.31	6.03	5.94	10.24	8.36	4.65
Diabetes mellitus	31.22	28.38	14.15	28.32	23.94	14.72	1.10	1.19	.96
Hernia, intestinal obstruction	21.60	18.50	10.05	10.00	10.24	6.46	2.16	1.81	1.56
Appendicitis	15.46	17.18	7.92	8.62	13.00	7.40	1.79	1.32	1.07
Pellagra	3.82	13.75	11.72	1.52	3.75	4.64	2.51	3.67	2.53
Ulcer of stomach or duodenum	11.85	11.86	5.41	7.06	7.33	5.12	1.68	1.62	1.06
Diseases of ear, nose, and throat	7.51	9.07	7.17	4.84	7.52	4.68	1.55	1.21	1.53
Cirrhosis of the liver	7.63	10.48	4.57	11.28	8.82	4.44	.68	1.19	1.03
Malaria	1.03	5.56	9.55	.42	1.61	2.36	2.45	3.45	4.05
Whooping cough	5.85	5.65	4.77	2.65	3.16	2.75	2.21	1.79	1.73
Suicide	4.98	5.01	3.00	18.31	16.82	11.18	.27	.30	.27
Typhoid and paratyphoid fever	1.92	4.61	4.13	.77	1.93	1.96	2.49	2.39	2.11
Biliary calculi, other diseases of gall-bladder	3.57	2.90	2.04	6.48	6.36	3.92	.55	.46	.52
Acute rheumatic fever	3.45	2.85	2.26	1.27	1.03	1.10	2.72	2.77	2.05
Exophthalmic goiter	2.02	3.02	1.37	2.37	2.10	1.40	.85	1.44	.98
Diphtheria	1.11	2.38	1.56	.95	2.24	2.06	1.17	1.06	.76
Cerebrospinal (meningococcus) meningitis	.73	.88	.53	.55	.83	.66	1.33	1.06	.80
Poliomyelitis, polioencephalitis (acute)	.26	.52	.46	.57	.78	.75	.46	.67	.61
Scarlet fever	.25	.17	.12	.32	.52	.43	.78	.33	.28

[1] The North: New England, Middle Atlantic, East North Central, and West North Central geographic divisions.

[2] The South: South Atlantic, East South Central, and West South Central geographic divisions.

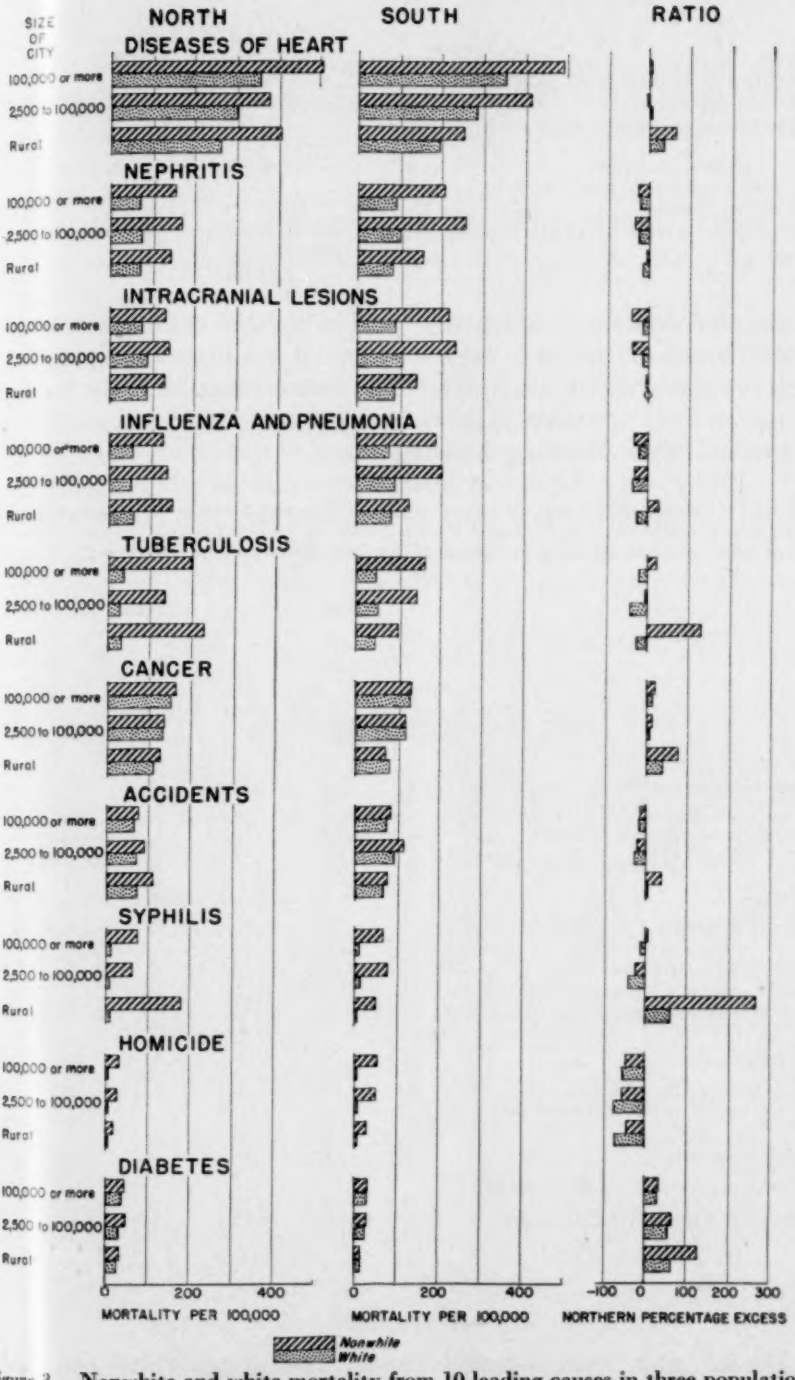

Figure 3. Nonwhite and white mortality from 10 leading causes in three population-size groups in the North and South sections of the Eastern and Central United States, and the percentage excess of North over South mortality—resident age-adjusted mortality, 1940.

	Population-size Group		
	100,000 and over	*2,500 to 100,000*	*Rural*
Northern mortality per 100,000:			
8 old-age causes	1044. 38	1062. 85	1312. 26
Ill-defined and senility	5. 75	8. 83	30. 93
Total	1050. 13	1071. 68	1343. 19
Southern mortality per 100,000:			
8 old-age causes	1094. 10	1125. 28	681. 68
Ill-defined and senility	28. 85	47. 49	83. 52
Total	1122. 95	1172. 77	765. 20

The above data add evidence to the findings that nonwhite mortality rates were relatively low in large cities and in Southern rural areas, and high in rural areas of the North. The causes responsible for the high Northern rural mortality rates were largely the diseases characteristic of persons in the older age brackets.

Table 4. ***Relative differences in mortality from 27 causes between the North and South sections of the Eastern and Central United States, by population-size groups: Nonwhite and white resident age-adjusted mortality per 100,000 population, 1940***

Cause of death	Ratio of North to South mortality					
	Nonwhite mortality by size of city			White mortality by size of city		
	100,000 or more	2,500 to 100,000	Rural	100,000 or more	2,500 to 100,000	Rural
Diseases of heart (all forms)	1. 04	0. 92	1. 62	1. 03	1. 06	1. 35
Nephritis	. 74	. 66	. 94	. 76	. 75	. 83
Intracranial lesions of vascular origin	. 61	. 61	. 93	. 86	. 86	1. 00
Influenza and pneumonia (all forms)	. 68	. 68	1. 26	. 77	. 62	. 73
Tuberculosis (all forms)	1. 22	. 95	2. 30	. 80	. 58	. 74
Cancer and other malignant tumors	1. 21	1. 12	1. 77	1. 15	1. 10	1. 39
Accidents	. 87	. 78	1. 40	. 85	. 74	1. 06
Syphilis	1. 08	. 78	3. 68	. 89	. 61	1. 63
Homicide	. 55	. 46	. 57	. 46	. 26	. 27
Diabetes mellitus	1. 36	1. 65	2. 28	1. 30	1. 31	1. 65
Hernia, intestinal obstruction	. 67	. 90	. 93	. 92	. 90	1. 29
Appendicitis	. 73	. 81	1. 39	1. 12	. 84	1. 27
Pellagra	. 19	. 10	. 05	. 11	. 04	. 04
Ulcer of stomach or duodenum	. 71	. 77	1. 48	1. 06	. 95	1. 06
Diseases of ear, nose, and throat	. 91	1. 03	. 88	. 96	. 69	1. 05
Cirrhosis of the liver	1. 28	. 97	1. 20	1. 06	. 97	1. 39
Malaria	. 64	. 26	. 34	. 26	. 06	. 07
Whooping cough	. 42	. 93	1. 24	. 27	. 44	. 39
Suicide	1. 43	1. 35	2. 99	. 80	. 85	1. 35
Typhoid and paratyphoid fever	. 46	. 59	. 93	. 39	. 25	. 33
Biliary calculi, other diseases of gall-bladder	1. 42	1. 79	3. 07	1. 13	1. 15	1. 48
Acute rheumatic fever	. 69	1. 29	1. 45	1. 07	1. 35	. 99
Exophthalmic goiter	1. 73	1. 47	4. 06	1. 34	1. 64	2. 31
Diphtheria	. 74	. 37	1. 78	. 46	. 28	. 30
Cerebrospinal (meningococcus) meningitis	. 64	1. 80	1. 98	. 69	. 76	. 58
Poliomyelitis, polioencephalitis (acute)	1. 73	2. 00	1. 70	. 79	1. 24	1. 37
Scarlet fever	2. 44	7. 47	----------	1. 50	1. 06	1. 84

Summary

Death rates from selected causes among nonwhite and white persons are presented for three population-size groups in the Northern and Southern regions of the Eastern and Central United States. The

27 causes discussed in the paper accounted for a large majority of the deaths tabulated in 1940.

The 10 leading causes of nonwhite deaths were: diseases of the heart, nephritis, intracranial lesions of vascular origin, influenza and pneumonia, tuberculosis, cancer and other malignant tumors, accidents, syphilis, homicide, and diabetes mellitus. Among the diseases that showed excess white mortality, cancer and diabetes were the highest ranking causes of death among nonwhite persons. Among the 27 causes, homicide showed the greatest percentage excess for nonwhite persons, and suicide for white persons

In the South the array of the 10 leading causes of nonwhite deaths did not vary materially by size of city. In the North, however, tuberculosis and cancer were relatively more important causes of death in large cities, and syphilis in rural areas.

Nonwhite mortality rates were relatively low in large cities and in Southern rural areas and were high in rural areas of the North. The causes of death occurring mainly in old age were those that exhibited excessive nonwhite mortality rates in Northern rural areas.

REFERENCES

(1) U. S. Bureau of the Census: 16th Census of the United States, 1940. Population—Characteristics of the nonwhite population by race. U. S. Government Printing Office, Washington, 1943.

(2) Linder, F. E. and Grove, R. D.: Vital Statistics Rates in the United States, 1900–1940. U. S. Government Printing Office, Washington, 1943.

(3) U. S. Bureau of the Census: Vital Statistics of the United States, 1940. Part II—Natality and mortality data for the United States tabulated by place of residence. U. S. Government Printing Office, Washington, 1943.

(4) Pennell, Maryland Y. and Lehmann, Josephine L.: Statistical studies of heart disease. VIII. Mortality from heart disease among Negroes as compared with white persons. Pub. Health Rep. **66:** 57–80 (1951).

Other Reports in Negro Mortality Series

(5) Gover, M.: I. Mortality from all causes in the death registration States. Pub. Health Rep. **61:** 259–265 (1946). Reprint 2695.

(6) Gover, M.: II. The birth rate and infant and maternal mortality. Pub. Health Rep. **61:** 1529–1538 (1946). Reprint 2750.

(7) Gover, M.: III. Course of mortality from specific causes, 1920–1944. Pub. Health Rep. **63:** 201–213 (1948). Reprint 2837.

Health Department Assistance in Nutrition Education in Elementary and Secondary Schools

By Floy Eugenia Whitehead, M.S.* and Fredrick J. Stare, M.D.†

Who in public health is concerned with nutrition education in the public schools, and what specifically is involved in contributions to a genuinely effective program?

It seems necessary that both school and public health personnel arrive at and accept some clearly defined purpose of nutrition education if they are to act with direction and without misunderstanding. Once they have accepted and understood their purpose they have rather definite ideas about what they may do, for (in educational realms at least) purposes determine scope, method, and activity. They also give direction to evaluation.

When an approach is made with the idea of setting up goals or purposes once and for all, the outcome is apt to be extremely limited. However, when the approach is made with the understanding that the goals formulated are subject to revision as need arises, the outcome is potentially rich. Sometimes it is helpful if general objectives which relate to both the elementary and secondary schools are developed with long-term implications. It is within specific objectives for specific age groups that one would hope to find the greater variation and the shorter-term implications.

For example, a general purpose may be to improve the nutritional status of children and teachers. This is a long-term, over-all purpose involving both behavior and fact. The extent to which the nutrition-education program contributes evidence of moving toward that purpose is the extent to which evaluation may be most genuine. A specific purpose, usually related to a general purpose by inference or by repetition in part, may be to guide fourth-grade children to appraise their food habits and to plan and carry out ways of making them better. This is a relatively short-term purpose. Progress toward it may be measured at short-term intervals. It is specific for fourth-grade children and when it has been reached, some progress has been made toward accomplishing the general purpose mentioned.[1]

Once purposes of nutrition education are formulated (this may require several meetings and considerable revision), activities will begin

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[1] For examples of purposes, objectives, goals, activities, and evaluation devices and procedures see references *1*, *2*, *3*, and *4*.

to fill in a program with efficient and gratifying outcomes—especially when that program is planned on the basis of needs of the children and teachers concerned.

Some of the "assistance" which is now being given by health departments to nutrition education in school programs includes services of: (1) nutritionists, (2) nurses, (3) sanitary engineers, (4) medical-social workers, (5) dentists and dental hygienists, (6) health educators, (7) laboratories, and (8) physicians. Of course, many areas may have none or only some of the services to offer. In a relatively few metropolitan areas may be found all of the services. Regardless of the public health personnel available, the services of the laboratories may nearly always be obtained through some medium.

Services of the eight groups, as directly related to nutrition education in schools, are described here as though they were all available from either local, district, or State health departments.

Public Health Nutritionists.[2] Service given by the public health nutritionists to school programs is only one of many in the total nutrition program, yet it is a very important one and usually stems from the role of a consultant. School people look to nutritionists for guidance in interpreting nutrition to teachers, to parents, and to school-lunch personnel. This service may take effect through participation in teacher-training activities, such as conferences, workshops, and group discussions in both preservice and inservice teacher-training programs. The nutritionist is regarded as a resource person and as a technical adviser who helps school personnel keep up to date on nutrition information, films, books, pamphlets, and effective ways of using these and other media in nutrition education. Sometimes the nutritionist works directly with children (and their parents) who have special nutritional problems, such as overweight, underweight, and diabetes. She rarely "takes over" a class for a teacher but rather works with her in planning learning experiences or developmental tasks for children within classrooms and school lunch rooms. She constantly emphasizes nutrition as being essential to better health. She must help school people develop an "ideal" of a well-nourished child (*5*). She must also help them to realize fully that no single factor is of more importance to a child's well-being than is nutrition (*6*).

Public Health Nurses. Assistance which public health nurses give to nutrition education in school programs should be complementary to that given by the nutritionist. Nurses who are well aware of the purpose of the program can give invaluable service by "carrying the same message" as that of the nutritionist into homes they visit, into well-child conferences, preschool conferences, and by being alert to nutrition teaching opportunities to interpret relationships between

[2] See Pub. Health Rep. 65: 411–445 (1950) for an interpretation of Nutrition Programs in State Health Departments.

nutrition and growth, structure of bones and teeth, resistance to infection, capacity to work, attainment of full physical vigor, and the enjoyment of healthier living. They, like all other workers in public health, give special impetus to nutrition education when they are able to teach children by precept and example that nutrition is important. An overweight nurse is hardly an asset to a nutrition education program. This holds for all school and public health personnel.

Sanitary Engineers. These representatives of the health department usually assist school principals in the work of safeguarding the water, milk, and other food supplies. They also conduct classes for food handlers. They serve nutrition education when they prepare and interpret materials relative to their activities, which teachers may use in classrooms. An interpretation of the State sanitary code in language the fifth-grader can understand will help in extending the school's nutrition-education work. When sanitary engineers take time to conduct field trips into community "water works," dairies, and market places with high school age boys and girls, they make a valuable contribution to nutrition education. The assistance of this group has been widely recognized as it has contributed directly to helping provide sanitary school lunchrooms which are the "laboratories" for nutrition education.

Public Health Dentists and Dental Hygienists. Perhaps this group gives more assistance to nutrition education than is generally realized. Because they, with the help of private dentists, reach almost every child in school, their opportunities to assist are almost as frequent as that of classroom teachers. When a child sits in the dental chair and hears the dentist or dental hygienist say the same things about foods which are essential to building strong bones and teeth and healthy gums that were said at school, he is impressed to such an extent that he often returns to his classmates and says, "That dentist told me the same things about what to eat as we talked about in class!" When teacher, dentist, nurse, and others all present the same nutritional messages to children, they remember them and are likely to practice them.

Medical-Social Workers. Although the services of these workers are, at present, mostly available at State and district levels, and the shortage of personnel limits their work with other agencies, they assist appreciably with nutrition education in schools. When medical-social workers are brought into teacher-supervisor conferences or workshops for the purpose of interpreting some of the socioeconomic and emotional factors involved in family relationships, as well as in an individual child's feeding problems, the result is a better understanding on the part of the teacher as to how she can guide pupils through some of their nutritional problems. It may take the medical-social worker's analysis to unravel many factors associated with help-

ing the diabetic child adjust to school. The social worker might be the connecting link between school and home which is necessary for the full success of the nutrition education program at school. She assists by giving consultant and educational guidance to parents as well as teachers when she helps them to see in full that children do not live by bread alone. The nutrition-education program which seeks only to impart knowledge has little effect upon children's food habits. Often it is the medical-social worker who can interpret the emotional factors associated with food acceptance or rejection which become indices to nutrition education.

Public Health Educators. These workers contribute most to nutrition education in schools when they extend the same emphasis made by the nutritionist. They, too, are resource people with potential assistance to schools which is rapidly becoming more fully realized. They are especially able to give information regarding such media as films, posters, exhibits, and ways and means of extending the school's nutrition-education work into the community—where it must go if all its purposes are completely achieved. Parents, as well as children, have roles to play in the school's nutrition-education work, and health educators are prepared to create situations in which parents, as well as teachers, and all representatives of the health department may work effectively. Usually this is done through school health committee organizations as a part of a health council. The word "organization" in this sense becomes a verb and denotes a continuous process. Herein health educators become coordinators of services and assistance in nutrition education at school.

Public Health Laboratories. Technicians in this group can assist nutrition education in schools by interpreting their services to teachers (often through sanitary engineers and nurses). They would assist very much by helping prepare simple materials to be used in instruction units, including such topics as: "Is Our Milk Safe?" "How Pure Is Our Water?" "Do We Have Adequate Sanitary Conditions In Our Lunchrooms?" "How Well Must a Food-Handler Be?" Although assistance from laboratories is usually given indirectly, it is nonetheless important. Field trips to public health laboratories are excellent learning experiences for school people. Such trips offer educational opportunities for high-school-age groups which may be a very appropriate part of a unit in nutrition education.

Public Health Physicians. This group, especially when trained in nutrition, becomes the fountainhead of assistance from health departments to school programs in nutrition education. They assist by working with school personnel and others concerned in developing policies which give authority and direction to programs. They contribute by helping school people keep informed about assistance, both consultative and in the form of grants-in-aid, available from Federal

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agencies. Health officers and staff assist most when they plan and work with, as well as for, school personnel in nutrition education. The physician who works with nutrition problems is in a unique position to interpret the community's nutritional needs upon which the school's nutrition-education program should be built. Nutrition education in the schools offers educational opportunities unequaled by any other single program within the health department.

REFERENCES

(*1*) Harvard University School of Public Health, Department of Nutrition: Goals for Nutrition Education for Elementary and Secondary Schools. Folder to be tacked to wall, distributed by the Nutrition Foundation Inc., Chrysler Bldg., New York 17, N. Y., 1947.

(*2*) Nutrition Objectives and Activities for Grades 1 to 3; Objectives and Activities for Nutrition Education, Grades 4 to 8; Outline of Nutrition Education Program for High School; Appraising Food Habits, An Evaluation Device With Suggested Procedures for Classroom Teachers. (For more information write: Mrs. Ruth Kean, Supervisor Nutrition Education, Louisiana State Department of Education, Baton Rouge, La.)

(*3*) List of Evaluation Materials on Nutrition Education. (For more information write: General Mills Inc. Educational Services. Minneapolis 1, Minn.)

(*4*) (a) Lockwood, Elizabeth A.: Activities in Nutrition Education for Kindergarten through the Sixth Grade. Harvard University School of Public Health, 44 pp.

(b) Activities in Nutrition Education—A unit for High School Biology classes. Distributed by the Nutrition Foundation Inc., Chrysler Bldg., New York 17, N. Y.

(*5*) Roberts, Lydia J.: The Road to Good Nutrition. Children's Bureau Publication 270, Federal Security Agency, Washington, D. C. 1927.

(*6*) Roberts, Lydia J.: Nutrition Work with Children. University of Chicago Press, Chicago 37, Ill. Chapters 1–2 and 10–13. 1935.

Rickettsialpox Case Due to Laboratory Infection

By Marvin H. Sleisenger, M.D.,* Edward S. Murray, M.D.,† and Sidney Cohen, M.D.*

Laboratory infections are an important hazard to personnel working with certain rickettsiae, such as the agents of Q fever and typhus fever. The risk of laboratory infection in persons working with *Rickettsia akari*, the agent of rickettsialpox, has not been evaluated. Rose (*1*) cites without detail one case of the disease contracted in his laboratory. In this paper, we are reporting a serologically proved case of rickettsialpox acquired in the laboratory. These observations indicate that laboratory work with the agent of rickettsialpox is not without risk of infection.

CASE REPORT

D.L.S., a 22-year-old married, German-born, laboratory technician, entered the Beth Israel Hospital for the first time December 5, 1949, with a complaint of chills and malaise.

The patient was apparently well until November 30, 1949, when she developed mild coryza and sore throat associated with slight generalized myalgia. The following day she was nauseated and had vague epigastric discomfort. The coryza and sore throat decreased and she was about to return to work when, on December 3, 1949,[1] she had a rather sudden onset of backache and severe frontal headache. At this time, she felt somewhat feverish and complained of marked malaise, anorexia, and weakness. The following morning her oral temperature was 101° F. falling to 100° F. by evening. Her headache increased in severity, and nausea returned. During the night of December 4–5, the patient had several chills with a rise in temperature to 101° F. She was admitted to the hospital the following morning.

Past history revealed an appendectomy at the age of 6 and bilateral otitis media at the age of 12. In 1946, she had recurrent attacks of abdominal pain and mild diarrhea. Amebiasis was diagnosed and treated with unknown medication. Repeated stool examinations since that time were negative. She had no further abdominal complaints or diarrhea.

The patient was employed as a technician in the rickettsial disease laboratory of the Harvard University School of Public Health. September 7, September 14, and November 2, 1949, she was inoculated with separate 0.5 cc. doses of vaccine against epidemic and murine typhus and Rocky Mountain spotted fever. Vaccination against rickettsialpox was not performed. From October 1, 1949, until the onset of the present illness, she participated in experiments with strains of murine and epidemic typhus, Rocky Mountain spotted fever, Canadian vole

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[1] Statements as to day of disease are based on the assumption that December 3, 1949, was the first day of illness due to rickettsialpox.

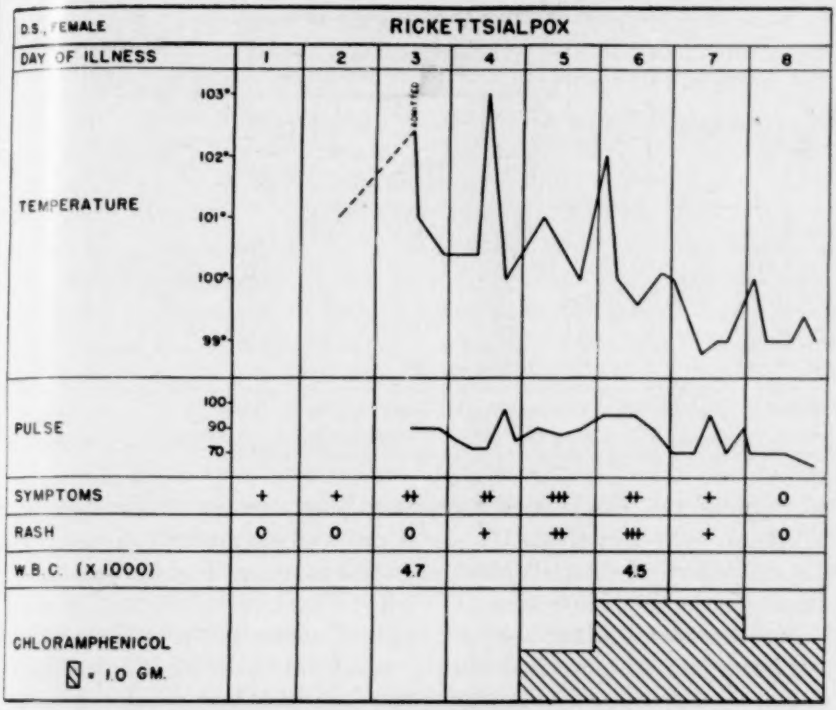
agent, and rickettsialpox. There was no recognized accident or break in technique in the laboratory which would have resulted in direct contact with virulent rickettsiae. However, on November 16 and 21, 1949, the patient manipulated yolk-sac membranes of chick embryos infected with the MK strain of rickettsialpox and made serial dilutions for the inoculation of mice on November 22, 1949.

Physical examination: The patient did not appear very ill. The rectal temperature was 102.4° F., the pulse 88, the respirations 20, and the blood pressure 105/70. No cutaneous eruption or enanthem was noted. The liver and spleen were not palpable. There was mild tenderness over the upper sacral and lower lumbar vertebrae.

During the first four hospital days, December 5–9, the rectal temperature ranged between 100° F. and 103° F., the latter temperature occurring after a short shaking chill. Generalized muscular pains, most marked in the lumbar region, moderate frontal headache, slight photophobia, nausea, and anorexia persisted. On December 6, the fourth day of the illness, three small, red macules were noted on the face, including one on the left eyelid. The following morning, about 8 or 10 pink macules 4 to 6 mm. in diameter were noted scattered over the trunk and about the same number of maculopapules on the extremities and face. Several of the papular lesions had a tiny, whitish point at the apex. The lesion on the left eyelid was definitely vesicular. The same evening, the end of the fifth day of illness, treatment with chloramphenicol was instituted; one gram was given by mouth every 6 hours. During the following day, no striking change was noted. Indeed, more of the eruption was vesicular, and a few papular, erythematous lesions, 2 to 4 mm. in diameter, were noted on the soft palate and buccal mucosa. However, after 36 hours of treatment the temperature dropped to normal where it remained except for a single rise to 100° F. By late evening of the seventh day of illness the patient felt well, and all symptoms, except for some mild blurring of vision, had disappeared. The rash quickly faded and was barely visible 3 days later when she was discharged from the hospital. She returned to work completely well on December 19, 1949. The clinical features are summarized on the chart.

Laboratory Data

An uncatheterized specimen of urine obtained December 5 contained 8 to 10 white cells per high power field. Urinalysis on December 9 was negative. The hemoglobin on admission was 12.7 grams and the red blood count 4.3 million. White blood counts on two occasions were 4,500 and 4,700. An initial blood smear showed 60 percent mature polymorphonuclear leukocytes, 9 percent band forms, 22 percent lymphocytes, and 9 percent monocytes. Another blood smear at the time of discharge showed 40 percent mature polymorphonuclear leukocytes, 19 percent band forms, 30 percent lymphocytes, and 11 percent monocytes. Three stool examinations disclosed no ova or parasites. Blood nonprotein nitrogen was 19 milligrams percent. The Hinton test was negative. Serum agglutinins were found in a dilution of 1–40 for typhoid O, typhoid H, and paratyphoid A. Heterophile agglutination test with sheep red blood cells was negative. Culture of the nose and throat showed no pathogenic organisms. The corrected blood sedimentation rate was 0.25 millimeter per minute (Rourke-Ernstene). Two blood cultures were negative.



Clinical features of rickettsialpox case. The final 2 days of normal temperature in the hospital are not recorded.

Blood drawn on the fifth day of illness was inoculated into eight mice. Six of these, having shown no sign of disease, were subsequently challenged with *Rickettsia akari* and died. Two mice were sacrificed 10 days after inoculation with no evidence of disease. Blind serial passages of brain material were carried through four passages in mice with negative results. A second specimen of blood drawn on the eighth day of illness was similarly carried through three passages in mice also with negative results. Complement fixation tests with rickettsial antigens and agglutination tests with *Proteus* antigens are summarized in the table. Antibody titers against the antigens of rickettsialpox and Rocky Mountain spotted fever rose from 0 to 1:80 by the twelfth day of illness. Concomitantly, titers against the antigens of typhus fever rose from 1:40 to 1:160 in the case of epidemic typhus antigen and from 1:20 to 1:40 in the case of murine typhus antigen. Agglutinations with *Proteus* OX–19, OX–2, OX–K were negative during and following the illness.

Discussion

The clinical and laboratory characteristics of rickettsialpox as reviewed elsewhere (*2*) are fairly accurately repeated in the history re-

Tests on serum specimens of patient D. L. S.

Date blood drawn	Day of disease	Complement fixation*					Weil-Felix OX*		
		Epidemic typhus	Murine typhus	Q fever	Rocky Mountain spotted fever	Rickettsialpox	19	2	K
Dec. 4, 1949	2	40	20	0	0	0	0	0	0
Dec. 6, 1949	4	20	10	0	0	0	0	0	0
Dec. 8, 1949	6				0	0			
Dec. 9, 1949	7				10	0			
Dec. 14, 1949	12	80	40	0	80	80	0	0	0
Dec. 19, 1949	17	160	40	0	80	80	0	0	0
Dec. 29, 1949	27	160	40	0	80	80	0	0	0
Feb. 8, 1950	68				80	80			
Apr. 24, 1950	143	160	40				0	0	0

*The figures in these columns are the reciprocals of the final serum dilutions.

NOTE: These tests were performed by Miss Avis Ofstrock. We are indebted to Dr. Herald R. Cox of Lederle Laboratories for the antigens used in the complement fixation tests.

ported above. The lack of a primary lesion was an atypical feature. Although 5 to 10 percent (*1*, *3*) of naturally acquired cases do not show a primary lesion, its absence in this instance may be due to the unnatural mode of infection.

It is our surmise that the agent gained access to the patient via the respiratory or conjunctival mucous membranes during the manipulation of the infected yolk-sac material. Infection from mites is unlikely, since colonies of these arthropods were not present in the laboratory during this period. No evidence of exposure of the patient to house mice was found. Her residence showed no signs of infestation with mice. No house mice have been caught in the laboratory although traps have been set.

The onset of the illness in this case was not sharply defined. Malaise and coryza were present for several days before the onset of feverishness, severe headache, and backache. This preliminary illness appeared to have been a common cold. However, it cannot, with certainty, be dissociated from the subsequent rickettsialpox. The interval between the onset of symptoms and the eruption of rickettsialpox is sufficiently variable as to be of no definitive value in settling this point. The precise duration of the illness in this case must therefore remain uncertain.

Oral lesions which were noted on the soft palate and buccal mucosa of the patient are not frequently seen in rickettsialpox. Greenberg and Pellitteri (*5*) reported oral lesions in only 2 of 144 cases and Rose (*1*), 9 of 35 cases.

The interpretation of the complement fixation tests is somewhat complicated in this instance by the previous vaccinations. The rise in antibody titer with typhus antigens is best ascribed to the recent inoculation of the patient with typhus vaccines. A rise in titer of this slight degree is often encountered in the post-vaccination period,

but is much lower than values obtained after typhus infections (*4*). The appearance in the convalescent period of complement-fixing antibodies both to rickettsialpox and to Rocky Mountain spotted fever antigens is the normal serological pattern of rickettsialpox (*5*). The possibility must be considered that these antibodies represent a delayed serological response to the vaccination against spotted fever. However, the rise in titer in this instance is distinctly larger than any which we have encountered in the sera of other persons receiving Rocky Mountain spotted fever vaccine (*6*). It is noteworthy that antibodies for typhus antigens were already present at the onset of the illness, while those for Rocky Mountain spotted fever and rickettsialpox appeared between the seventh and twelfth days of illness. One might expect, if antibodies were to be produced by the vaccination against spotted fever, that a detectable titer would have appeared about the same time as did those against typhus, since the dates of vaccination were identical. For these reasons, the complement fixation tests may be best interpreted as indicative of an infection with rickettsialpox. The negative agglutination tests with *Proteus* antigens is in accord with this diagnosis.

The infection with rickettsialpox in this case is consistent with the hypothesis that vaccination against Rocky Mountain spotted fever does not confer complete immunity against rickettsialpox.

The institution of treatment with chloramphenicol on the fifth day of illness was followed in 36 hours by a drop in temperature and subsidence of symptoms. Although the possibility of spontaneous recovery is not excluded, such a response is similar to that noted with chloramphenicol in epidemic typhus, scrub typhus, and Rocky Mountain spotted fever (*7*). Rickettsialpox has previously been shown to be amenable to treatment with aureomycin (*1*).

Summary

A laboratory worker exposed to the MK strain of rickettsialpox suffered an acute febrile illness accompanied by a rash typical of rickettsialpox. Serological data support the clinical diagnosis. The causative agent was not isolated from the patient's blood. Our case and that reported by Rose (*1*) indicate the potential hazard involved in working with rickettsialpox in the laboratory.

REFERENCES

(*1*) Rose, H. M.: The clinical manifestations and laboratory diagnosis of rickettsialpox. Ann. Int. Med. **31**: 871–881 (1949).

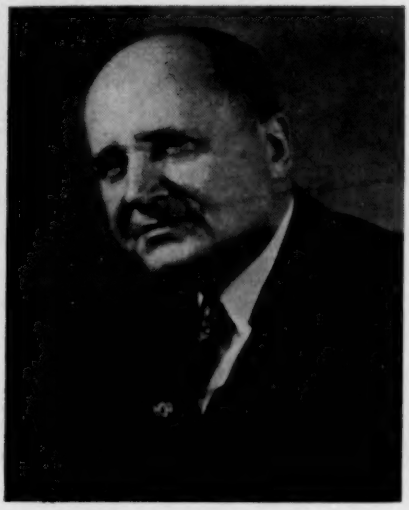
(*2*) Pike, G., Cohen, S., and Murray, E. S.: Rickettsialpox: report of a serologically proven case occurring in a resident of Boston, Massachusetts. To be published.

(*3*) Greenberg, M., Pellitteri, O., Klein, I. F., and Huebner, R. J.: Rickettsialpox—a newly recognized rickettsial disease. II. Clinical observations. J.A.M.A. **133**: 901–906 (1947).

(4) Zarafonetis, C. J.: Serologic studies in typhus-vaccinated individuals. I. The effect of a stimulating dose of typhus vaccine on the Weil-Felix and complement-fixing antibodies. J. Immunol. **51**: 365–374 (1945).
(5) Greenberg, M. and Pellitteri, O.: Rickettsialpox. Bull. New York Acad. Med. **23**: 338–351 (1947).
(6) Snyder, J. C. and Murray, E. S.: Unpublished observations.
(7) Smadel, J. E.: Chloramphenicol (chloromycetin) in the treatment of infectious diseases. Am. J. Med. **7**: 671–685 (1949).

Williams Retires, Masur New BMS Chief

Jack Masur, M.D.



Ralph C. Williams, M.D.

Appointment of Dr. Jack Masur as Chief of the Bureau of Medical Services to succeed Dr. Ralph C. Williams has been announced by Leonard A. Scheele, Surgeon General of the Public Health Service.

Dr. Williams retired February 1 from the Public Health Service after 33 years of active duty. He has become Director of the Division of Medical Services for the Georgia Department of Public Health in Atlanta.

Dr. Masur has served as Chief of the Research Facilities Planning Branch and Director of the Clinical Center at the National Institutes of Health since 1948. The planning and construction of the Clinical Center, the largest research facility of its kind in the world, and which is scheduled to open in 1952, has been largely accomplished under his direction.

Entering the Public Health Service in 1943, Dr. Masur served until 1944 as Hospital Officer of the U. S. Office of Civilian Defense. In 1944–45, he was Chief Medical Officer of the Office of Vocational Rehabilitation, FSA. He then served for 2 years as consultant on the Hospital Building Committee of the Federation of Jewish Philanthropies, New York City. From 1941 to 1943, he was Executive Director of Lebanon Hospital, and from 1936 to 1940, Assistant Director of Montefiore Hospital for Chronic Diseases, both in New York City.

Dr. Williams was engaged for a time in the private practice of medicine in Alabama and for 3 years was with the Alabama State Health Department. He entered the Public Health Service in 1917 and since that time has served in many capacities. He was editor of the PUBLIC HEALTH REPORTS for 9 years and during that period was in charge of the public information activities of the Public Health Service. From 1936 to 1942 he was Chief Medical Officer of the Farm Security Administration. For 2 years during World War II, he was in charge of Public Health Service District No. 1. In 1943, Dr. Williams was assigned as Chief of the Bureau of Medical Services and served in that capacity until his retirement.

Dr. Williams has just completed the first comprehensive history ever prepared on the work of the Public Health Service since its establishment more than 150 years ago. This book, The United States Public Health Service 1798–1950, is being published by Whittet and Shepperson, Richmond, Va., and is expected to be in print by June of this year.

Incidence of Disease

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

Reports from States for Week Ended February 17, 1951

The number of cases of influenza for the current week was 5,581 as compared with 5,243 for the same week last year which was the 5-year median. A total of 3,355 cases was reported for the week ended February 10, 1951. Three States, Massachusetts, New York, and Pennsylvania, in which mild respiratory infections are now prevalent do not report influenza.

In New York State, as reported by Dr. R. M. Albrecht, a disease clinically resembling influenza occurred among university students in Syracuse in December 1950. A similar outbreak in a State hospital followed, but in neither instance was influenza virus isolated. The first proved occurrence of influenza in upstate New York affected Niagara Falls and the city of Buffalo. No deaths attributed to influenza have been reported in this area. Madison and Chenango Counties have also had clinical influenza. Clinical influenza has again involved Syracuse, where 250 cases were admitted to the university infirmary. A junior college in Dutchess County had 40 cases in a population of 185. A hemagglutinating agent has been isolated from cases in Niagara Falls and Syracuse and from cases in Madison and Chenango Counties. There has been no increase in mortality in Buffalo and Syracuse.

Dr. Morris Greenburg, New York City Health Department, reports an outbreak of a disease resembling influenza in a 5,000-bed hospital in the Bronx. About 250 cases in patients and attendants have been reported. The outbreak started in 1 ward and spread to 7 others where about 500 patients are housed. Throat washings and acute blood have been taken for laboratory examination.

Dr. M. M. Siegel, Children's Hospital, Philadelphia, reports an increased incidence of respiratory disease in the Philadelphia area.

Dr. Vlado Getting, Commissioner of Public Health, Massachusetts, has reported that upper respiratory infections causing absenteeism of 10 to 20 percent is widespread in the eastern part of Massachusetts. Most of the cases are stated to be mild and of short duration.

Dr. W. L. Halverson, California Director of Health, states that

reports of local health officers indicate that the mild upper respiratory infection is still confined to northern and central California. Specimens of blood submitted to the regional influenza laboratory from one district in central California showed that A-prime influenza virus was present. Official reports of influenza in California during January were below the 5-year median but were more than three times the median during the first 2 weeks of February.

The above reports in conjunction with laboratory findings reported indicate the occurrence of localized epidemics of influenza principally due to type A-prime virus, especially in the Middle Atlantic States. There was little influenza reported in this area last year. Mortality reports from 106 cities in the United States showed a significant rise in number of deaths from all causes in only one area. A 7-percent rise in number was reported in the cities located in the Middle Atlantic States for the week ended February 17 as compared with the previous week.

Comparative Data for Cases of Specified Reportable Diseases: United States

[Numbers after diseases are International List numbers 1948 revision]

Disease	Total for week ended—		5-year median 1946–50	Seasonal low week	Cumulative total since seasonal low week		5-year median 1945-46 through 1949-50	Cumulative total for calendar year—		5-year median 1946–50
	Feb. 17, 1951	Feb. 18, 1950			1950–51	1949–50		1951	1950	
Anthrax (062)	1	------	------	(1)	(1)	(1)	(1)	10	2	8
Diphtheria (055)	105	143	207	27th	3,589	5,470	7,960	682	1,196	1,602
Encephalitis, acute infectious (082)	16	6	6	(1)	(1)	(1)	(1)	72	73	53
Influenza (480–483)	5,581	5,243	5,243	30th	34,210	30,744	33,075	19,668	20,160	20,160
Measles (085)	13,890	7,136	13,932	35th	99,179	55,959	79,598	70,478	36,829	53,474
Meningitis, meningococcal (057.0)	108	82	88	37th	1,705	1,524	1,524	744	611	608
Pneumonia (490–493)	2,037	2,524	------	(1)	(1)	(1)	(1)	[2]12,317	16,202	------
Poliomyelitis, acute (080)	92	97	43	11th	33,126	42,269	25,246	907	795	449
Rocky Mountain spotted fever (104)	------	------	1	(1)	(1)	(1)	(1)	2	6	5
Scarlet fever (050) [3]	2,435	2,005	2,798	32d	31,064	28,415	41,437	15,373	11,976	17,837
Smallpox (084)	2	------	2	35th	14	16	43	6	9	22
Tularemia (059)	12	22	25	(1)	(1)	(1)	(1)	105	167	167
Typhoid and paratyphoid fever (040, 041) [4]	35	49	42	11th	3,186	3,691	3,691	271	317	292
Whooping cough (056)	1,546	2,701	2,095	39th	33,111	38,587	38,832	11,509	17,051	15,743

[1] Not computed. [2] Addition: Tennessee, week ended January 27, 67 cases.
[3] Including cases reported as streptococcal sore throat.
[4] Including cases reported as salmonellosis.

Reported Cases of Selected Communicable Diseases: United States, Week Ended Feb. 17, 1951

[Numbers under diseases are International List numbers, 1948 revision]

Area	Diphtheria (055)	Encephalitis, infectious (082)	Influenza (480–483)	Measles (085)	Meningitis, meningococcal (057.0)	Pneumonia (490–493)	Poliomyelitis (080)
United States	**105**	**16**	**5,581**	**13,890**	**108**	**2,037**	**92**
New England	**1**	**1**	**34**	**613**	**1**	**64**	**1**
Maine			12	3		6	
New Hampshire			1	3		2	
Vermont			17	226			
Massachusetts	1	1		329	1		
Rhode Island			2	3		4	
Connecticut			2	49		52	3
Middle Atlantic	**4**	**4**	**27**	**1,600**	**14**	**204**	**12**
New York	3	3	[1] 23	440	5	42	11
New Jersey	1	1	4	409	5	82	
Pennsylvania				751	4	80	1
East North Central	**6**	**3**	**15**	**2,499**	**21**	**116**	**9**
Ohio	4			649	9		3
Indiana			6	205	1	11	2
Illinois	2		9	325	2	72	1
Michigan		3		419	3	33	2
Wisconsin				901	6		1
West North Central	**5**	**1**	**7**	**1,086**	**8**	**46**	**18**
Minnesota	2			84	2	5	
Iowa				2	1	3	3
Missouri	3	1	5	602	2	1	5
North Dakota			2	32	1	19	1
South Dakota				21	1		1
Nebraska				2			4
Kansas				343	1	18	2
South Atlantic	**15**	**2**	**1,436**	**1,096**	**22**	**285**	**13**
Delaware				24			
Maryland			13	57	3	31	
District of Columbia			14	54	1	22	
Virginia	4	2	731	153	4	139	
West Virginia	1		283	120	4	18	1
North Carolina	2			133	5		5
South Carolina	1		212	23	1	40	
Georgia	4		183	499	1	35	5
Florida	3			33	3		2
East South Central	**18**	**2**	**1,943**	**621**	**18**	**118**	**6**
Kentucky	2		8	389	10	63	
Tennessee	1	1	87	113	6		3
Alabama	8		1,832	24	1		
Mississippi	7	1	16	95	1	55	3
West South Central	**34**	**1**	**738**	**3,155**	**8**	**919**	**9**
Arkansas	4		526	151	2	76	
Louisiana	4		11	110	1	47	1
Oklahoma	4		201	308	1	63	1
Texas	22	1		2,586	4	733	7
Mountain	**6**		**1,092**	**1,529**	**5**	**154**	**5**
Montana	1		7	38			1
Idaho				64			
Wyoming				81		2	
Colorado	1		72	862	4	59	4
New Mexico	3		9	36		40	
Arizona	1		653	368	1	53	
Utah				45			
Nevada			351	35			
Pacific	**16**	**2**	**289**	**1,691**	**11**	**131**	**19**
Washington	1		11	483	2	7	4
Oregon	7		74	49	2	46	6
California	8	2	204	1,159	7	78	9
Alaska							
Hawaii			1	2			

[1] New York City only.
Anthrax: Pennsylvania, 1 case.

Reported Cases of Selected Communicable Diseases: United States, Week Ended Feb. 17, 1951—Continued

[Numbers under diseases are International List numbers, 1948 revision]

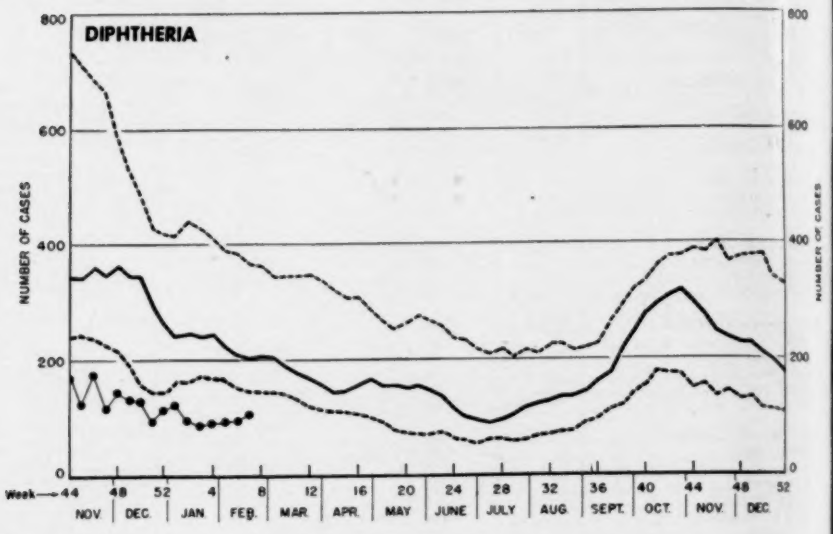
Area	Rocky Mountain spotted fever (104)	Scarlet fever (050)	Smallpox (084)	Tularemia (059)	Typhoid and paratyphoid fever [1] (040, 041)	Whooping cough (056)	Rabies in animals
United States		**2,435**	**2**	**12**	**35**	**1,546**	**129**
New England		**223**				**166**	
Maine		8				20	
New Hampshire		1				11	
Vermont		3				31	
Massachusetts		172				75	
Rhode Island		12				16	
Connecticut		27				13	
Middle Atlantic		**441**			**5**	**276**	**8**
New York		[2] 220			2	73	8
New Jersey		89				86	
Pennsylvania		132			3	117	
East North Central		**615**	**1**	**1**		**190**	**19**
Ohio		196				38	2
Indiana		49				21	11
Illinois		84		1		12	4
Michigan		231				62	2
Wisconsin		55	1			57	
West North Central		**129**				**80**	**13**
Minnesota		31				10	1
Iowa		23				11	12
Missouri		28				11	
North Dakota		4				3	
South Dakota						4	
Nebraska		8				3	
Kansas		35				38	
South Atlantic		**226**		**7**	**6**	**183**	**17**
Delaware		5				3	
Maryland		26			1	26	
District of Columbia		18				1	
Virginia		51		1	2	34	3
West Virginia		14				20	2
North Carolina		67			1	38	
South Carolina		9				3	7
Georgia		14		6		44	5
Florida		[2] 22			2	14	
East South Central		**106**			**6**	**76**	**25**
Kentucky		37			2	21	11
Tennessee		59			4	11	12
Alabama		10				37	
Mississippi						7	2
West South Central		**137**		**3**	**8**	**382**	**36**
Arkansas		8		3	2	45	3
Louisiana		24			2	2	
Oklahoma		18			1	37	
Texas		87			3	298	33
Mountain		**183**	**1**	**1**	**2**	**123**	**1**
Montana		12				20	
Idaho		36				2	
Wyoming		1				5	
Colorado		15			1	16	
New Mexico		4		1	1	34	
Arizona		17	1			45	1
Utah		[3] 95					
Nevada		3				1	
Pacific		**375**			**8**	**70**	**1**
Washington		124			2	18	
Oregon		78			3	2	
California		[3] 173			3	50	1
Alaska						9	
Hawaii		2					

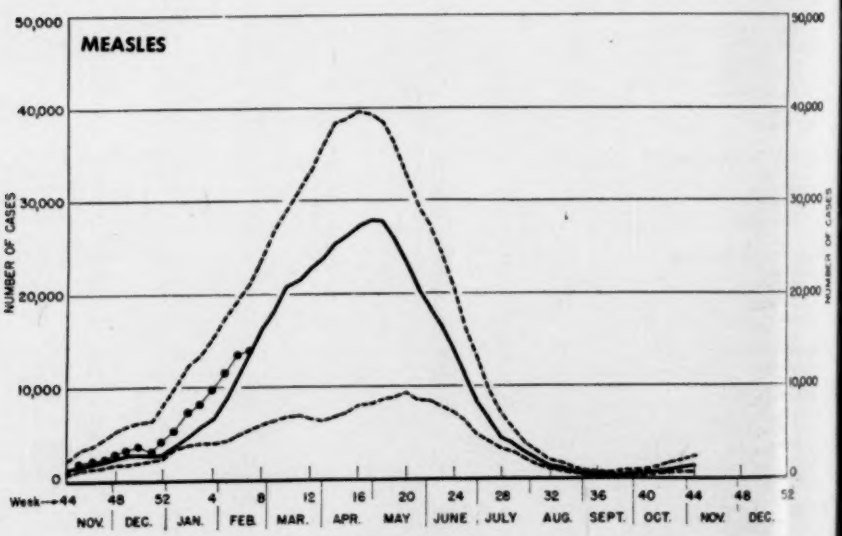
[1] Including cases reported as salmonellosis.

[2] Including cases reported as streptococcal sore throat.

Communicable Disease Charts

All reporting States, November 1950 through February 17, 1951


DIPHTHERIA
NUMBER OF CASES
800
600
400
200
0
Week→ 44 48 52 4 8 12 16 20 24 28 32 36 40 44 48 52
NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.


MEASLES
NUMBER OF CASES
50,000
40,000
30,000
20,000
10,000
0
Week→ 44 48 52 4 8 12 16 20 24 28 32 36 40 44 48 52
NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

The upper and lower broken lines represent the highest and lowest figures recorded for the corresponding weeks in the preceding 5 years. The solid line is a median figure for the preceding 5 years. All three lines have been smoothed by a 3-week moving average. The dots represent numbers of cases reported weekly, 1950-51.

FOREIGN REPORTS

CANADA

Reported Cases of Certain Diseases

Week Ended Jan. 27, 1951

Disease	Total	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Brucellosis	5					3	1				1
Chickenpox	1,584	4		60		227	770	54	111	129	229
Diphtheria	8					5	3				
Dysentery, bacillary	5					3					2
Encephalitis, infectious	1						1				
German measles	427			23		27	180	2	19	16	160
Influenza	562	155		401	2		2	2			
Measles	2,478	6		16	2	151	2,058	104	50	14	77
Meningitis, meningococcal	4						2		1	1	
Mumps	1,649	7		26	1	169	515	50	240	233	408
Poliomyelitis	1						1				
Scarlet fever	353				1	89	49	31	17	75	91
Tuberculosis (all forms)	245			10	20	82	31	12	7	50	33
Typhoid and paratyphoid fever	22					15				2	5
Venereal diseases:											
Gonorrhea	299	5		15	11	56	35	36	16	33	92
Syphilis	96	5		2	2	38	18	3	9	2	17
Primary	4					1	1		2		
Secondary	1					1					
Other	91	5		2	2	36	17	3	7	2	17
Whooping cough	191	3		9	4	47	50	10	4	4	60

Week Ended Feb. 3, 1951

Disease	Total	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Brucellosis	3					2					1
Chickenpox	1,316			16	94	213	592	41	35	115	210
Diphtheria	2					1		1			
Dysentery, bacillary	6					5					1
German measles	443			45		31	243		11	24	89
Influenza	1,339	659		639	3			7	20		11
Measles	2,621	10		28	11	210	2,092	169	49	25	27
Meningitis, meningococcal	9					6	1	1	1		
Mumps	1,501	4		12	1	273	470	54	166	256	265
Poliomyelitis	1									1	
Scarlet fever	327			1	4	76	51	38	7	76	74
Tuberculosis (all forms)	227	8		6	3	52	35	24	4	64	31
Typhoid and paratyphoid fever	2					2					
Venereal diseases:											
Gonorrhea	280	4		3	11	60	48	33	11	31	79
Syphilis	104	5		8	4	44	19	2	9	6	7
Primary	10	1			1	3	4			1	
Secondary	6					2			2	2	
Other	88	4		8	3	39	15	2	7	3	7
Other forms	1										1
Whooping cough	361	1		3	78	56	127	35	1	11	49

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

The following reports include only items of unusual incidence or of special interest and the occurrence of these diseases, except yellow fever, in localities which had not recently reported cases. All reports of yellow fever are published currently. A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

India. Cholera was reported in ports of India for the week ended February 3, 1951, as follows: Calcutta, 82 cases, Madras, 17, Tiruchirappalli, 14, Negapatam, 7, and Bombay, 1.

Plague

Belgian Congo. One fatal case of plague was reported in Stanleyville Province on February 13, 1951.

Smallpox

Burma. During the week ended February 3, 1951, smallpox was reported in Burma as follows: Kyaukpyu, 22 cases, Akyab, 12, and Rangoon, 2.

Indochina. During the week ended February 3, 1951, smallpox was reported in Viet Nam as follows: Saigon, two cases, and Haiphong one.

Iran. During the week ended February 3, 1951, 10 cases of smallpox were reported in various airports of Iran.

Iraq. For the week ended February 10, 1951, 16 cases of smallpox were reported in Iraq.

Typhus Fever

Iran. During the week ended February 3, 1951, eight cases of typhus fever were reported in Iran.

Morocco (French). One case of typhus fever was reported in Casablanca during the period January 21–31, 1951.

Turkey. During the week ended February 10, 1951, six cases of typhus fever were reported in Turkey. Istanbul and Izmir reported one case each for the week.

Yellow Fever

Sierra Leone. One suspected case of yellow fever was reported in Freetown on February 8, 1951. This case was in an uninoculated African male who was hospitalized February 8.

Plague Infection in Lea County, New Mexico

A report dated February 2, 1951, states that plague infection was proved positive for two specimens consisting of tissue and 30 fleas from a wood-rat, *Neotoma albigula*, and its nest. The rat was found dead January 15, 1951, 4 miles east of Hobbs in Lea County.

A report dated February 13, 1951, states that plague infection was proved positive in a specimen of 36 fleas taken from 2 wood rats, *Neotoma albigula*, trapped January 19, 1951, 1½ miles east of Hobbs City dump.

One County's Health Services

A limited number of mimeographed copies of "Organized Services in a Rural County," a study by Dr. Milton I. Roemer, public health physician, and Ethel A. Wilson, public health analyst, are now available from the Division of State Grants of the Public Health Service.

The study, conducted in Monongalia County, W. Va., in 1949, sets down systematically the structure and function of all organized health services having an impact on the people of one county. Considered are the services not only of the health agencies but also of the many other agencies in whose general efforts health may be only one part. Voluntary agencies and even businesses, as well as governmental authorities, are included. The programs described emanate from Federal, State, and community levels and relate to medical care as well as prevention of disease or injury.

A study of this comprehensiveness can serve as a reminder to the public health worker of the manifold programs of health promotion going on every day around him, with which he may be maintaining little relationship. The challenge to the health department as a "coordinating center" for all community health service is made clear.

Inventories and analyses of this type can be made in any community. And the methods followed in this study may be of assistance.

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The printing of this publication has been approved by the Director of the Bureau of the Budget (August 10, 1949).

The PUBLIC HEALTH REPORTS, first published in 1878 under authority of an act of Congress of April 29 of that year, is issued weekly by the Public Health Service through the Division of Public Health Methods, pursuant to the following authority of law: United States Code, title 42, sections 241, 245, 247; title 44, section 220.

It contains (1) current information regarding the incidence and geographic distribution of communicable diseases in the United States, insofar as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other important communicable diseases throughout the world; (2) articles relating to the cause, prevention, and control of disease; (3) other pertinent information regarding sanitation and the conservation of the public health.

The PUBLIC HEALTH REPORTS is published primarily for distribution, in accordance with the law, to health officers, members of boards or departments of health, and other persons directly or indirectly engaged in public health work. Articles of special interest are issued as reprints or as supplements, in which forms they are made available for more economical and general distribution.

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